Working Paper Series

MILITARY PERSONNEL RESEARCH: SCIENCE OR POLITICS

by

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MILITARY PERSONNEL RESEARCH: SCIENCE OR POLITICS?

I. Research Analysis and Evaluation

It appears to me that many of the studies undertaken by the military in the area of manpower and personnel are characterized by no small degree of confusion as to the fundamental purposes of performing such studies. This confusion is frequently illustrated by the often inappropriate substitution of the labels research, analysis, evaluation, assessment, etc., one for the others. While the exact differences among these terms are primarily of interest to semanticists and grammarians, it may be instructive for those of us engaged in related activities to clarify the subtle but nevertheless important distinctions among these terms as they apply to studies in manpower and personnel.

For purposes of discussion, I have taken excerpts from the Webster dictionary definitions:

research - careful, systematic, patient study and investigation in some field of knowledge, undertaken to discover or establish facts or principles.

analyze - to separate into its parts so as to find out their nature, proportion, function, inter-relationship, etc; to examine in detail so as to determine the nature or tendencies of.

evaluate - to find the value or amount of; to judge or determine the worth of quality of; appraise.

assess - to estimate or determine the significance, importance or value of; evaluate.

As is obvious there is much in common among these terms, indeed the last two are close synonymns. There are numerous activities that could be reasonably described by all four words. Thus imprecise usage is perhaps not unexpected, however dysfunctional. My claim that inappropriate and sloppy

labeling of manpower studies is dysfunctional stems from the resulting obfuscation of the primary purpose motivating such studies. Where such confusion exists in fact or in form, there is increased risk of inferior work whatever the underlying purpose. Studies may be inferior because of inadequate or inappropriate methodology, deficient or erroneous interpretation, imprecise or faulty technique, inconsistent or weak reasoning, trivial or unsupported generalizations, etc. The probabilities of all these difficulties are increased when a study is performed without clear conscious understanding of why the study was initiated in the first place and how it is to be used as a second essential consideration.

To return to the above dictionary definitions, to me the major distinctions among the purposes of research, analysis, and evaluation are the following: Research is devoted to the determination of scientific truth as governed by the logic and limitations of science. Therefore personnel research is concerned with the discovery of stable universal propositions that explain the dynamics and behavior of people in a variety of organizational situations. Given the level of abstraction and sophisticated method that scientific research typically involves, the primary audience, or consumer if you will, is the community of scientists and scholars interested in such subjects. In addition, interest in any individual unit of analysis (e.g., organization, person, group) is relevant only to the degree that its characteristics can be generalized to a larger population. In this sense research is universalistic rather than particularistic.

Analysis on the other hand is particularistic rather than universalistic. Since analysis is separation (at least conceptually) into

constituent parts, the notion of system is inherent in any form of analysis. (It is ironic that systems analysis is such much in vogue when in fact the adjective is redundant). Analysis is concerned with the structure and behavior of a given system, which may or may not be typical of another system. In other words when we conduct an analysis we are interested in how a particular system works. If the results inform our understanding of other genotypic or phenotypic systems, such an analysis may be of interest to the community of scholars and thus be regarded as research. Otherwise it is potentially of interest only to those working with or for the system. Such analyses are only potentially interesting because any insight regarding the characteristics may not necessarily permit or facilitate the initiation of change or adaptation of the system. These kind of analyses are academic exercises in the true sense. When analyses generate understanding and information that allow reengineering of existing systems or the design of new ones, then such studies have real practical, and in the case of personnel analyses, managerial relevance.

Evaluation is also particularistic in that it is concerned with the value of something, e.g., system, policy, resource, plan, strategy, etc. Evaluation differs from analysis in that evaluation is concerned with the molar qualities of a given unit of study and not especially with the internal micro mechanisms. Evaluation answers the question what is it worth, not how it works. The purpose of evaluation should be to support decisions to initiate, modify, maintain, or terminate various courses of action. Implicit in any evaluation is the assumption of well-defined operational criteria from which value can be determined. (Note that this is not necessarily true for research or analysis.) With respect to studies in manpower and personnel, questions of value are among the most controversial, complex,

and difficult to resolve. Because of this and its impact on decisions, evaluation in these areas are more vulnerable to political considerations than either research or analysis (although these latter two may also be 'contaminated'). Evaluation tends to be political because it is directed toward influencing some decision or set of decisions, and these decisions more likely than not have implications in terms of resources, power, or prestige. In other words, evaluations are likely to have differential effects on the welfare of parties directly and indirectly involved.

I should state explicitly that many personnel studies can and do serve multiple purposes and are of interest to several audiences. However, unless great care is exercised in the design and execution of any study, there is greater likelihood that the primary purpose may be lost or forgotten in the broader context. Perhaps the greatest danger of social science research is that it is often misconstrued, misinterpreted, and misapplied because it is utilized beyond the limits of its original purpose or removed from its proper context.

While this discussion has not exhausted the distinctions among research, analysis, and evaluation, and while others may address different issues, I think it has served to introduce a variety of questions that are germaine to the design, management, and use of studies in manpower and personnel. Although some of the points raised will have more or less relevance to social science in general, the intent is to face problems associated with conducting studies in the particular institutional context of the federal government.

II. Purposes of Studies in Manpower and Personnel

It is convenient perhaps to discuss the possible purposes underlying manpower and personnel studies in terms of a series of questions that

should be raised, preferably before or during the initiation of such studies.

A. Who is the principal consumer of the study?

Although any particular study may have clearly identified origins, it is not necessarily true that the original requestor for a personnel study is also the principal consumer. For example OSD may request from the Navy a specific investigation of some topic in manpower or personnel; however, the principal consumer or target audience may well be someone else, e.g., Congress, OMB, the public, etc. Among the possible markets for manpower-personnel studies are the following:

1. The academic and scientific community: scholars, researchers, journal editors, university administrators, etc.

2. Policy makers: senior military command, DOD executives, Joint Chiefs of Staff, Office of Management and Budget, Congress, etc.

3. Resource allocators: Congress, OMB, DOD, first echelon military commands, etc.

4. Line managers: persons in the chain of command who have direct responsibility for the management and utilization of military personnel.

5. Staff organizations: people responsible for analysis, evaluation, and recommendations related to the management of human resources.

6. The general public.

B. Why do they want it? What are they going to do with it?

Unless the information and results from any study is of value to the ultimate consumer, the investigation is likely to have minimal, and perhaps negative, impact. The utility of personnel studies for the preceding list of possible consumers will differ from audience to audience. For example academics are nominally interested in advancing scientific knowledge, satisfying intellectual curiousity, or exploring serendipitous findings. Policy makers are

concerned with formulating and changing plans, strategies, programs, policies, and decisions. Resource managers want to know how best to allocate limited resources among numerous competing demands. Operational managers are most interested in improving the performance in their own organizations. Staff departments seek information that enables them to demonstrate their analytic expertise. The information needs of the general public are notoriously complex and ambiguous. However, it may not be totally inaccurate to propose that 'entertainment' value is a significant factor in attracting and keeping the public interest. In other words, what is likely to command public attention is information that is important, new, unusual, threatening, stimulating, etc.

C. What will they pay attention to? What is important to them?

Each market has its own preferences and biases. Consideration of the unique characteristics of the consumer will increase the probability that communication and influence will be effective. The academic community has reasonably well defined requirements that should be met if any study is to be accepted as valid. For example, there are implicit and explicit rules about rigor, format, method, search, and inference. At the other extreme there are few rigid constraints imposed by the general public, although they too are not without their likes and dislikes. The interests and predilections of Congress may vary year to year; nevertheless, studies that are intended to influence legislators have inevitable political connotations that should be recognized so that they may be determined intentionally. It is not uncommon for personnel studies to be evaluated primarily in terms of the tone and style of writing rather than the substantive content. Carried to the extreme, too much concern for the desires of the consumer could easily

compromise the integrity of any study and its conclusions. However, with careful thought and expression almost any personnel study can be both faithful to the truth and persuasive to its audience.

D. What is the focus of the study?

While complete answers to the previous questions may well narrow considerably the scope of relevant personnel interest, there remains substantial latitude in the choice of the specific subject of study. Human resources in the military are characterized by such rapid rates of change and high levels of complexity that no research program however comprehensive could be expected to exhaust the possibilities for meaningful personnel research*. It is all the more important in the face of these innumerable opportunities to choose carefully and precisely a manageable set of issues, each of which is clear, distinct, and tractable. All too often personnel studies suffer from a lack of focus, an unmanageably large set of issues, or a subject that is incoherent or vague. Much of these difficulties could be avoided by making logically reasoned decisions about the central research questions to be addressed.

It may be helpful in formulating the appropriate questions and determining the focal issues to consider the following three general research categories: descriptive, predictive, and normative. The purpose of descriptive research is essentially to determine and understand the state of nature at some point in time. Specifically with regard to personnel and manpower, descriptive research would include studies of the quality and quantity of available human resources. At the simplest level descriptive research might involve sophisticated theorizing and modeling of the underlying causes which would be tested against empirical data. Althought descriptive research focuses upon what has already happened or is happening,

*For the sake of convenience, the term research from here on is broadly construed to include analysis, evaluation, assessment, and other investigative activities.

when it is successful in explaining certain phenomena under specified conditions it may also constitute the basis for predictive research.

The purpose of predictive research is to estimate the most likely future consequences of a given set of realistic assumptions and specified antecendents. Here the emphasis is on the magnitude and rate of change. Although causal modeling may well improve the predictive accuracy of such studies, it is not strictly necessary. For example, a variety of statistical and econometric methods may be quite effective in estimating future outcomes without any explicit specification of underlying causes (e.g., trend analysis, time series analysis, spectral analysis, etc.). Nevertheless the better the mechanisms and processes of change are understood and established (i.e., the specification of the dynamic relationships among the variables of interest) the more confidence there is about the validity and accuracy of the results of predictive research.

The purpose of normative research is to ascertain the relative, if not the absolute, desirability (or utility) of various alternatives. Essential to this kind of research is the specification of criteria from which value can be determined, a measurement process which reliably estimates the value of alternatives, and a choice mechanism which selects from among them. Examples of normative research include cost-benefit analyses, feasibility studies, program evaluation, personnel assessment, etc. (It may be appropriate to note parenthetically that in order for normative recommendations to be practically meaningful or managerially relevant, there should also be some knowledge of how the preferred alternatives are likely to occur. For example, a personnel study which concluded that the minimum education level among all enlisted should be a college degree could be normatively correct but practically unrealistic.) In the Navy there are substantial pressures to conduct normative research around

personnel issues because of the widespread interest in improving the effectiveness and efficiency of manpower utilitzation. For example assessment of the operational impact of the Navy's Human Resource Management Program is essentially normative in nature.

The distinctions among descriptive, predictive, and normative research can perhaps be simply summarized by saying that the first is concerned with what has happened, the second with what will happen, and the third with what should happen. In relating these categories to the initial discussion about analysis, evaluation, etc., certain connections may be obvious. Descriptive research generally consists of activities that are termed analysis: examination of parts to understand the behavior of the whole. Normative research involves evaluation or assessment: the determination of value. Predictive research involves synthesis: the integration of diverse pieces of information culminating in estimates of the future.

In actual practice, these distinctions are probably less clear and individual examples of research may not be as easily classified. After all many personnel studies may involve analysis, synthesis, and evaluation simultaneously and may exhibit descriptive, predictive, and normative characteristics. However, when there is confusion about the kinds of the central research questions to be addressed, there is increased likelihood that the quality of research, both in substance and form, would be seriously compromised. The main point of this discussion is in summary form rather trite. In designing personnel studies it is important to identify the central focus and to specify the questions the studies are intended to answer.

E. What data are required?

Once the central study questions have been determined, the next problem is to establish what kinds, quality and quantity of information are necessary to satisfactory answers. Obviously the primary determinants of required data are the questions posed. Thus the first consideration for data selection is relevance. Does the potential information contain any meaning that pertains to the questions of interest?

While data may be relevant, extraction of meaning may be problematic. Hence the second consideration is tractability -- can the data be manipulated to provide appropriate intelligence? Factors underlying tractability include quality (accuracy and timeliness), quantity (completeness and comprehensiveness), adequate variation, factorization (decomposibility), and interpretability (comprehensibility and translatability).

A third consideration is availability - can the data be accessed at reasonable cost? There are many interesting and important military personnel questions that remain unanswered because of the paucity of relevant data. While many of these informational deficiencies can in principle be remedied, the associated costs of data collection are often prohibitive. The decision to use any particular data source depends upon the costs of obtaining the data relative to the available resources and to the expected value of the information desired.

A fourth consideration in data selection is credibility - will the data be plausible and convincing to the primary consumers of the study? While the credibility of data can be enhanced by ensuring its relevance and presenting it persuasively, there are often external constraints on what will be accepted at face value and what will be challenged or rejected. For example some critics of personnel research have little if any confidence

in survey methods and would be skeptical of any such study. On the other hand there are others whose credence is won only when a specific kind of information is used, e.g., quantitative data, historical data, etc. In addition the more that data can be generalized to other contexts and situations, the more credible it will tend to be. For the more idiosyncratic information is, the greater the suspicion that any meaning could be explained by chance alone.

Although these four factors do not exhaust all the considerations appropriate to data selection, they do address some of the major issues. A final qualification is that there are likely to be inherent trade-offs among relevance, tractability, availability, and credibility. In other words it is the rare data source that ranks high on all four criteria, while it is to be expected that data ranking high on one will rank lower on the others.

F. Who is to perform the research?

This is not a question that is typically asked in academic research since it is usually the case that investigators and problems go together in search of sponsors. Similarly among research contractors the situation is typically one in which available analysts are competing for sponsors with abundant resources. While both these communities may have strong if divided convictions about who is to perform any particular research project, the choice for the Navy as both sponsor and consumer is often unclear. Before choosing among the variety of external research institutions, the Navy sponsor must decide first whether it is to be conducted in-house, i.e., by some organization or agency within the government. More often than not there is not a demonstrably superior alternative that would dominate the choice. Rather each possibility usually has a different mix of advantages and disadvantages which makes it difficult to

compare alternatives. Nevertheless there are several considerations which would illuminate the decision.

First among these is competence. Do the potential investigators have the expertise, experience, skills, background and knowledge to complete the research successfully? Are their capabilities current with recent demonstrations or is their experience dated or perhaps remain to be proven? What is the reputation of the performing organization? What is the experience of the government with them if any? How reliable has the organization been in meeting commitments? In responding to request for proposals, did the organization communicate adequate understanding of the issues and problems involved as well as some imagination and insight as to how they should be addressed? Since it is difficult to make evaluation of competence a completely objective process, a reasonable alternative is to allow subjective judgements to play a role but to be explicit and conscious as to how the final decisions are affected by them. In other words, if you can't make unbiased decisions, make sure any inherent biases are identified and examined for consistency and relevance.

A second criterion is objectivity. Even though the competency of an investigator may not be in question, there may be some uncertainty about the accuracy, balance, and completeness that is brought to bear. It is not unusual for some investigators to have their own agenda which is pursued perhaps to the detriment of the study. For example the integrity of results may be compromised because the contractor is interested in ensuring follow-on business, or the internal agency wishes to avoid adverse publicity, or staff department has a particular axe to grind. It is not always true that outside evaluation can be relied upon to be more objective and honest than those available from internal sources. However

it is commonly believed that internal evaluators are suspected of being susceptible to undue influence. (A prophet is without honor in his own country.) While not universally true, there is a tendency for familiarity with a subject matter to be inversely related to objectivity of perspective. That is to say the more closely an investigator is involved in a problem, the less likely it is to remain uncontaminated by bias and prejudice. The balance between adequate familiarity and appropriate objectivity is sometimes not easily maintained.

A third criterion is resources. While the competency criterion addresses the qualitative aspect of capability, the resources criterion involves the quantitative. Are there sufficient numbers of people of the right kind to be available for the required periods of time? Does the performing organization have the financial technological, managerial, and logistical depth adequate to complete the study under a variety of circumstances, some of which may be less than optimal? Are there sufficient reserves and back-up support in the event of unforeseen contingencies? Is the health and survival of the investigating organization so marginal that it depends upon either performing the study or the results? Answers to these kinds of questions will affect not only the quality of the service provided but also the probability of successful completion.

A fourth criterion is motivation. How much interest and enthusiasm do the prospective investigators have for performing the study? Are they likely to devote the energy and commitment to carry out the project in the face of inevitable frustrations and difficulties? How much persistence, and diligence are they willing to bring to bear? Is there the possibility that they might be overly motivated? That is could they be so zealous in fulfilling their mission that their judgement and orientation would be

seriously distorted?

Finally the credibility of the investigators is an important selection criterion. Although it would be reasonable to expect that candidates that pass all the previous criteria would be ipso facto credible, such is not always the case. Credibility is as much a function of the predelictions of the consumer as it is of the virtues of the provider. In some cases it may even be more so. The essential question here is whether the primary consumer is likely to accept the conclusions from a particular investigator whatever the results may be. If the answer is negative, then choice of such an investigator is probably self-defeating. As an extreme example it is improbable that American officials would accept without challenge research results from the Russian military establishment unless they happened to coincide with already firmly held beliefs. It is not too far fetched to imagine that there may be some organizations that would not be believed by Congress, DOD, OMB, etc., regardless of the excellence of the credentials of the individuals actually performing the research. Indeed such skepticism is not infrequently encountered when the Navy brings its own studies to Congress in support of specific legislation. Moreover it would not be unduely pessimistic to expect that similar doubts would arise in conjunction with research on the Navy's Human Resource Management. Consequently it is especially important to pay attention to external credibility in the design and execution of personnel research in the military.

G. What are the constraints on research?

In the military environment there are a variety of constraints that need to be recognized in performing personnel research. In addition to conventional requirements on deadlines, format, distribution, etc., there are other more fundamental issues, not the least of which is the amount of funding available to perform the research. Budgetary restrictions are probably the

most important determinant of the scope and level of effort. Although there may be some latitude in negotiating resources depending upon the significance of the study objectives, there are usually fairly strong limits on available funds which should be carefully observed in designing personnel research. In addition the uncertainty in funding often varies considerably over the course of the project. Bureaucratic delays in the budgeting and allocation processes are aggravated by unpredictable shifts in mission priorities at all levels in the government. Sometimes it seems that the most important function performed by research sponsors is politicking for resources rather than in specifying needs and managing results.

Schedule constraints are another important factor in research design especially in the military context. Because of the annual budget cycle and the rapid turnover of military sponsors, there is often great pressure to achieve results and conclusions in the near term even though the phenomena of interest are of fairly long lifetimes. In such cases the prudent sponsor would be well advised to develop a modular research design that could either be implemented in parallel or at least allows the generation of partial results before the final project conclusion. A harsh but essential proposition to remember is that research almost always takes more time than was planned.

In the government political constraints are ubiquitous although typically subtle and hidden. On military personnel matters they may sometimes be explosive, i.e., when these constraints are violated the repercussions may be violent. To be more specific there may be specific issues, methods, populations, and conclusions that are so politically sensitive that related research runs the risk of very hostile reactions from powerful antagonists. An example of a sensitive issue is military unionism, of a sensitive

method human experimentation with drugs, of a sensitive population homosexuals, and of a sensitive conclusion women make superior combatants. The point here is not to avoid controversial research, but rather to recognize the problems and special considerations that may well defeat if not undermine even the best efforts to explore and understand personnel issues that may be highly politicized.

A fourth set of constraints are social and legal. There may be legislative and social inhibitions on certain types and methods of research. For example the Privacy Act and the Freedom of Information Act have directly affected the ways that personnel information can be collected and stored. The Navy has recently exercised very tight controls over the use of field surveys. In addition within the academic community there have been recent debates, often quite heated, on the moral and scientific limitations of social research.

Finally there are a set of constraints that might be termed technical. These refer to logical and scientific restrictions governing internal and external validity and causal inference. Social science does not enjoy the powerful methods nor the relatively simple phenomena of the physical sciences. Hence the achievement of scientific proof and the demonstration of causal relationships have been marginally successful in social science in general and in personnel research in particular. In the social sciences there is a plethora of simplistic studies using little more than correlational techniques that fail to capture the richness of the real underlying dynamics or substantive understanding of any practical relevance. Awareness of these technical constraints may prevent the formulation of impossible research objectives and the stimulation of unrealistic expectations.

H. How is the research to be conducted?

It is not coincidental that this question is the last to be raised in this discussion. It has been my observation over the past year that much confusion regarding management of personnel research in the military can be traced to addressing this question prematurely. Frequently there is a failure to recognize and resolve the basic issues underlying the purpose and value of research. Without adequate appreciation and explicit consideration of these concerns, research on military personnel is unlikely to be productive and useful and in the extreme unlikely to be supported and accepted by the principal consumers.

On the other hand, careful and comprehensive deliberation on the matters raised here would go a long way to delimiting the choices regarding how the research is to be done. The strategic questions of what kind of research design is most appropriate and the tactical questions of which analytic methods are most efficient would be resolved much more intelligently after these antecedent issues are decided. It is a common problem among studies of military personnel to concentrate, inappropriately in my view, on the specifics of how research is done rather than on the substance of what is to be learned by whom for what purpose. In this field as much as in any other, we are often seduced into becoming enamoured with the trees because they are so interesting and manageable while the forest is so large and forbidding.

In conclusion this essay has highlighted and perhaps belabored the non-scientific aspects of conducting personnel research in the military context. Some purists may argue that this is a contradiction in terms and that any political consideration removes an activity from the realm of science and is therefore not research. While it may be fun to debate the

point, the intent here is not to engage in a semantic argument. Instead my purpose is to call attention to some of the pitfalls and traps awaiting sponsors and managers of personnel studies. Whether scientific or political, personnel research must become more valuable in the eyes of those who allocated limited resources lest it becomes a strictly academic activity in the worst sense.

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C. Brooklyn Derr, Editor

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